We Claim:

1. An electric generator for generating electric power from a medium experiencing a cycling temperature defining hotter portions and a colder portions of said cycling temperature, said generator comprising:
   A) a container containing a phase change material,
   B) a heat transfer element in thermal communication with said medium experiencing said cycling temperature,
   C) a thermoelectric module sandwiched between said container and said heat transfer element,
   D) an electric energy storage device, and
   E) a bridge circuit for utilizing electric power generated by said thermoelectric module to charge said electric energy storage device during both of said hot and cold portions of said temperature cycles.
2. The generator as in Claim 1 wherein said phase change material comprises ice and water.
3. The generator as in Claim 1 wherein said phase change material comprises water and ammonia.
4. The generator as in Claim 1 wherein said phase change material is at a temperature approximately equal to its solid-liquid phase change temperature.
5. The generator as in Claim 1 wherein said phase change material is at a temperature approximately equal to its liquid-vapor phase change temperature.
6. The generator as in Claim 1 wherein said heat transfer element is a finned element.
7. The generator as in Claim 1 wherein said generator comprises at least one thermoelectric module comprised of thin film thermoelectric n-legs and p-legs.
8. The generator as in Claim 1 wherein said generator comprises :
   A) a plurality of n-legs comprised of very thin alternating layers of silicon and silicon carbide; and
   B) a plurality of p-legs,;

   said p-legs and said n-legs being electrically connected to produce said thermoelectric module.

9. A thermoelectric module as in Claim 8 wherein said p-legs comprise very thin alternating layers of boron carbide.

10. A thermoelectric module as in Claim 9 wherein said very thin alternating layers of boron carbide comprise two different stoichiometric forms of boron carbide.

11. A thermoelectric module as in Claim 3 wherein said very thin alternating layers of boron carbide are alternating layers of $B_4C$ and $B_9C$.

12. A thermoelectric module as in Claim 9, wherein said plurality of n-legs is comprised of a plurality of very thin alternating layers of silicon and silicon-carbide and said very thin alternating layers of boron carbide are alternating layers of $B_4C$ and $B_9C$.

13. A thermoelectric module as in Claim 8 wherein said alternating layers are deposited on a substrate.

14. A thermoelectric module as in Claim 13 wherein said substrate is silicon.

15. A thermoelectric module as in Claim 13 wherein said substrate is silicon film.

16. A thermoelectric module as in Claim 15 wherein said substrate is a polyimide substrate.

17. A thermoelectric element as in Claim 16, wherein said polyimide substrate is Kapton®.

18. A thermoelectric element as in Claim 17, wherein said polyimide substrate is Kapton® film.

19. A thermoelectric element as in Claim 8, wherein said very thin alternating layers are each less than 100nm thick.

20. A thermoelectric element as in Claim 8 wherein said very thin alternating layers are each about 10 nm thick.

21. A thermoelectric element as in Claim 8 wherein said plurality of very thin alternating layers is at least 1250 layers.

22. An electric generator for generating electric power from a medium experiencing a cycling temperature defining hotter portions and a colder portions of said cycling temperature, said generator comprising:

A) a container containing a heat sink – heat source material,

B) a heat transfer element in thermal communication with said medium experiencing said cycling temperature,

C) a thermoelectric module sandwiched between said container and said heat transfer element.

23. A thermoelectric element as in Claim 22 and also comprising an electric energy storage device for storing electric energy generated by said module.

24. A thermoelectric module as in Claim 23 and also comprising a bridge circuit for utilizing electric power generated by said thermoelectric module to charge said electric energy storage device during both of said hot and cold portions of said temperature cycles.